Analysis of Riparian Conservation Objectives

Riparian Conservation Objectives (RCOs) are presented and described in Appendix A of the 2004 ROD for the Sierra Nevada Forest Plan Amendment (USDA 2004). Integral to achievement of these objectives are the 32 prescribed standards and guidelines for riparian conservation areas listed in section D of the ROD. These standards and guides provide requirements for stream crossing structures, coarse woody debris in treated areas, identification of restoration needs, and many other Forest management activities that are not usually applicable to PNF vegetation management or road / motorized trail treatments. An analysis of the RCOs relative to PNF vegetation management or road / motorized trail treatments is presented below.

RCO #1: Ensure that identified beneficial uses for the water body are adequately protected. Identify the specific beneficial uses for the project area, water quality goals from the Regional Basin Plan, and the manner in which the standards and guidelines will protect the beneficial uses.

Existing beneficial uses for PNF surface waters are identified in the Central Valley Water Quality Control Plan for the Sacramento and San Joaquin River Basins (CVRWQCB, 1998). This plan identifies beneficial uses for specific water bodies and states that those beneficial uses generally apply to tributary systems of those water bodies. All of the project waters flow into the Middle Fork of the Feather River in particular the section classified as Little Chance Creek to Lake Oroville. The beneficial uses are identified in the table below.

Beneficial Use	**Middle Fork Feather River, Little Last Chance Creek to Lake Oroville**
Municipal and domestic water supply include the uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.	X
Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation (including leaching of salts), stock watering, or support of vegetation for range grazing.	
Hydropower generation includes the uses of water for hydropower generation.	
Water Contact Recreation (REC-1) - Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.	X
Non-contact Water Recreation (REC-2) - Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.	X
Warm Freshwater Habitat (WARM) - Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.	X
Cold Freshwater Habitat (COLD) - Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.	X

Migration of Aquatic Organisms (MIGR) – Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.	
Spawning, Reproduction, and/or Early Development (SPWN) - Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.	X
Wildlife Habitat (WILD) - Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.	X

Among these beneficial uses, aquatic habitat is the most sensitive to delivery of fine sediment that could potentially result from land disturbing activities. Effective implementation of US Forest Service BMPs (USDA, 2012) and design elements (Management Requirements Table), which including streamside protection zones, soil stabilization treatments, and road drainage implementation measures would prevent sediment delivery and other contaminants from entering streams that would significantly affect the beneficial uses of water resources in and downstream of the project area.

The project waters do flow into the Middle Fork Feather River which is 303d listed for toxicity and source is unknown.

RCO #2: Maintain or restore: (1) the geomorphic and biological characteristics of special aquatic features, including lakes, meadows, bogs, fens, wetlands, vernal pools, springs; (2) streams, including in stream flows; and (3) hydrologic connectivity both within and between watersheds to provide for the habitat needs of aquatic-dependent species.

PNF vegetation management and road / motorized trail treatments contain several elements directly aimed at improving water quality in the project area. National Forest System road improvements at stream crossings and removal or crossings on obliterated non-system roads will improve water quality and stream flow in the project area. The removal of vegetation in the project areas may also increase local soil moisture and increase stream flows.

Project design features, including equipment exclusion zones and standard BMPs implemented during forest thinning, prescribed grazing, and prescribed fire activities would prevent sediment delivery to special aquatic features that would significantly affect water and habitat quality.

RCO #3: Ensure a renewable supply of large down logs that: (1) can reach the stream channel and (2) provide suitable habitat within and adjacent to the RCA.

In most forested landscapes, large woody debris (LWD) is an essential element of proper functioning channel condition. LWD provides aquatic and terrestrial habitat diversity, structural conditions within channels (e.g., pool formation and fine sediment retention) and may increase channel shading thus reducing water temperatures.

For PNF mechanical thinning treatments, equipment exclusion zones along streams and special aquatic features will limit the taking of the larger trees in those areas if the trees are deemed capable of surviving after the North Complex Fire.

RCO #4: Ensure that management activities, including fuels reduction actions, within RCAs and Critical Aquatic Refuges enhance or maintain physical and biological characteristics associated with aquatic- and riparian-dependent species.

Project specific design elements are included in project-level NEPA analyses for PNF projects that include Critical Aquatic Refuges, such as the 115,939-acre Critical Habitat Unit for California Red-Legged Frog that exists in in Butte and Plumas counties. The Plumas and Lassen national forests manage about 81 percent of this unit. The physical and biological characteristics associated with aquatic- and riparian-

dependent species would be maintained for PNF vegetation management and road / motorized trail treatments through implementation of BMPs and typical design features.

RCO #5: Preserve, restore, or enhance special aquatic features, such as meadows, lakes, ponds, bogs, fens, and wetlands, to provide the ecological conditions and processes needed to recover or enhance the viability of species that rely on these areas.

As described under RCO #2, PNF vegetation management and road / motorized trail treatments are designed to improve the condition and sustainability of streams and wetlands within the project area. Equipment exclusion zones for special aquatic features are designed to protect project soil measures and water quality. No special aquatic features were identified in the project.

RCO #6: Identify and implement restoration actions to maintain, restore or enhance water quality and maintain, restore, or enhance habitat for riparian and aquatic species.

In addition to aspen and meadow restoration treatments described above, system road improvements and non-system road obliterations will directly improve water quality and habitat for aquatic and riparian species. Additionally, the reduction of excessive forest fuels will decrease the risk of high severity wildfire which has been shown to put water quality and habitat at risk.

There is a need to improve roads to reduce the amount of sediment from roads that reach streams. To protect water quality, roads will be modified by adding drainage structures such as critical dips, rolling dips, dips with leadoff ditches, and ditch relief culverts, and by out-sloping certain segments of road. Other activities include rocking inside ditches and rocking segments of road. Other treatments done is general road maintenance which includes cleaning inside ditch, cleaning ditch relieve culverts, blading road surface, and cleaning the inlets and outlets of stream crossings. A work list of road improvements will be created and filled in the Erosion Site Table for Significant Existing or Potential Erosion Site (SEPES) that is submitted to the Water Board that is part of the Notice of Intent (NOI).